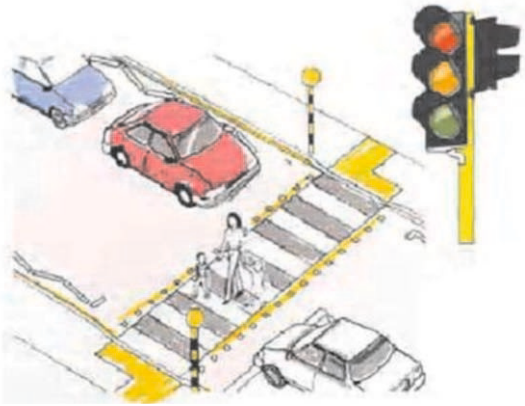
Arithmetic Progression

Objective :

Forming Arithmetic Progression with the time taken and distance covered while crossing traffic signals.

Content :

In an arithmetic progression we deal with the sequence and series of numbers which can include distances and time as well. As the distance from one place to another is covered by road also may be by car, or any other light vehicles or heavy vehicle. So an A.P. can be formed by time taken and the distance covered.



Exercise :

Distance from A to B is 150 Km and has 10 traffic signals. If a car travels at a uniform speed of 60 Km/hr. With all green signals it reaches pt. B in 2 hrs. 30 mins; but on another day on heavy traffic day it gets a stoppage as follows :

First signal - 1 min.

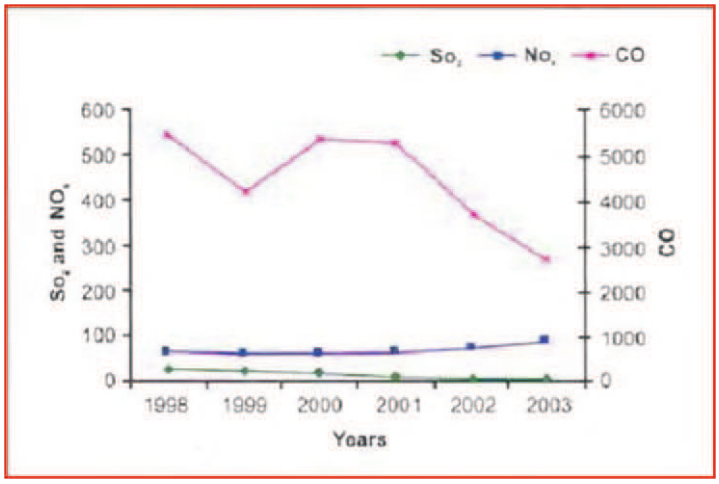
Second signal - 2 min. .....Till Tenth signal ..... 10 min.

Calculate the total time taken by the same car if it is obeying all traffic signals (ignore other hurdles) and moves with the same speed of 60 Km/hr.

Data Collection

Objective :

Control of vehicular pollution is necessary. Measures adopted to reduce pollution are emphasized.



The above graph shows concentration of major atmospheric pollutants. In which year was decrease of major pollutants noted? What do you attributed this to?

Do you know that a Pollution Under Control (PUC) certificate is mandatory for every vehicle.

Pollution Control Certificate (P.U.C.)

Applications of Trigonometry

Objective :

Application of trigonometry on road in light of increasing traffic and accidents.

Content :

As the heights and distances deals with the measurement of heights or distances of the objects like towers, buildings etc., this can be related to the traffic and road as the traffic on roads is increasing and the number of accidents is increasing.

Exercise :

A CCTV Camera is to be placed on top of an erect pole of height 13m such that it captures footages of all the vehicles passing beyond the line of sight if viewed from top such that the line of sight is of measure 12m. In such a case

(1) What is the distance from the feet of pole beyond which the traffic on road is visible?

(2) What is the area around the pole that has to turned into a green patch?

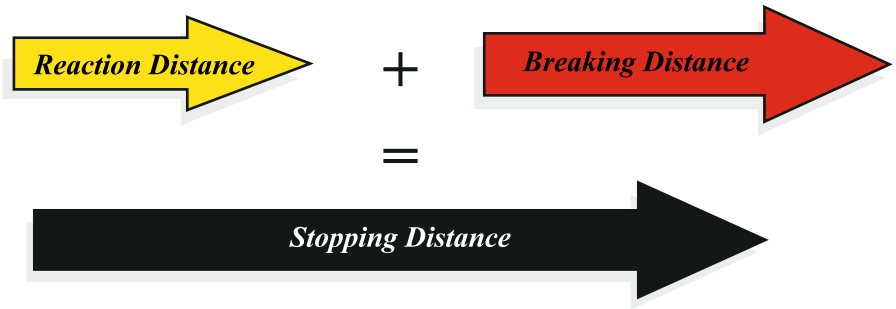
(3) Do you think CCTV cameras are really useful to manage the traffic sense? If yes, then How?

Problems on Two Varibles

Objective :

Problem related to road scenarios are used to solve equations.

Stopping Distance = Reaction Distance + Breaking Distance



A car moves with a speed of 50km/hr.

If the stopping distance = 40 m and retardation is 4.4 m/sec^2 calculate reach time.

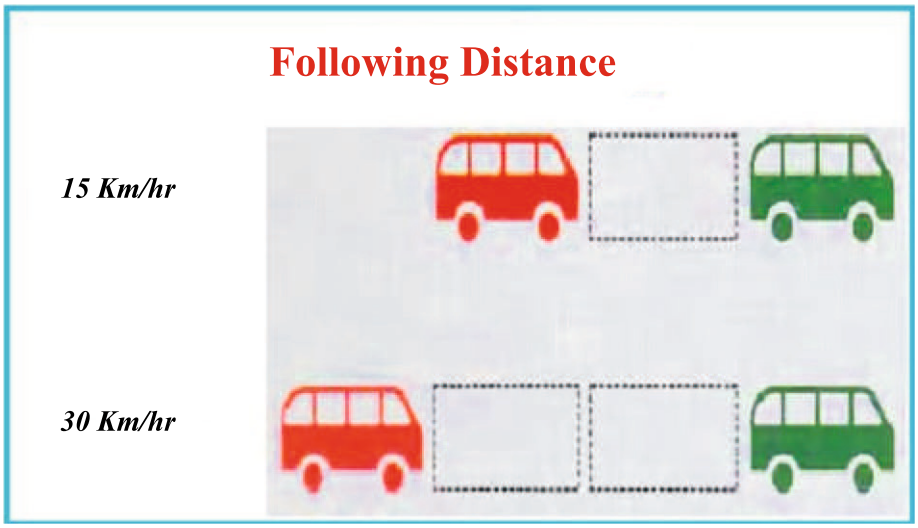
1. Will the stopping distance change with the speed of vehicles?
2. Howe will it change on wet slippery road?

Following Distance :

How much distance in seconds you should keep in following the vehicle in front of you, can be calculated with reference to speed, stopping distance and reaction time.

A simple way of calculating seconds is suggested as :

Firstly you could count in a rhythmic manner 19-20-21 i.e. nineteen, twenty, twenty one and normally each rhythmic count is equal to one second.



How much distance in seconds must be kept between you and the vehicle you are following?

This is calculated as :

Speed (Km/hr)	Total Stopping Distance (m)	Reaction Distance (m)	Following Distance (sec.)
(i)	(ii)	(iii)	(iv)
30	18	9	2
60	54	18	-
90	108	-	4

Find the missing values.